

OUTSTANDING GEOLOGIC FEATURE OF PENNSYLVANIA

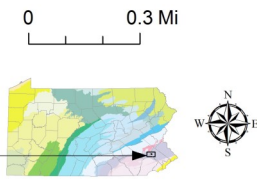
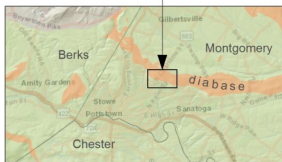
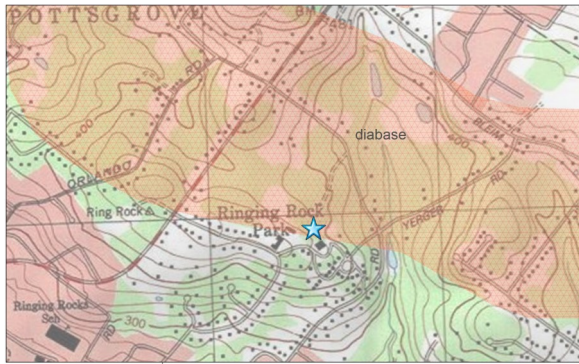
RINGING ROCKS, MONTGOMERY COUNTY

Stuart O. Reese, 2016



Location

Ringling Hill Fire Company Park, Montgomery Co., Lower Pottsgrove Twp., lat: 40.27004, lon: -75.60641 (parking); lat: 40.27064, lon: -75.60597; Sassamansville 7.5-minute quadrangle



Geology

Ringling Hill Fire Company Park is located 32 miles southwest of a similar though larger [Ringing Rocks of Bucks County](#). Both sites are exceptional boulder fields that have a certain “ring” to them. Their formation began at the very beginning of the Jurassic, about 200 million years ago, when an igneous rock called diabase intruded Late Triassic sedimentary rocks in the form of magma. This occurred as Africa rifted from North America during the breakup of the supercontinent Pangaea. After diabase sills and dikes intruded the basin, normal faulting and some folding developed as the entire basin tilted to the northwest. Long-term weathering of the rocks has since uncovered the diabase. Because of its tough, interlocking minerals, the diabase forms local topographic highs in what was once an upland basin. The Mesozoic rocks of this area are part of the Gettysburg-Newark Lowland section of the Piedmont physiographic province. Periglacial conditions during the Pleistocene formed the boulder field when repeated freeze-thaw cycles broke off pieces of fractured bedrock.

As the site’s name suggests, some of the boulders will ring like a bell when struck by a hammer. The musical quality of these boulders has long attracted attention. It is generally thought that a delicate, complex balance of conditions, including mineralogy, weathering properties, and microclimate, combines to produce a distinctly musical rock. Two minerals dominate the composition of the diabase: plagioclase feldspar and pyroxene. As the outer rim of a boulder weathers, pyroxene minerals change and expand into clays, creating tension in the surface of the rock. Projecting boulders that are exposed in the sunshine away from the shade of the woods are among those that have developed a capacity to ring when struck.



Left: Ringing Rocks boulder field of Montgomery County. Right: Block of diabase showing pitted weathering of its surface. Measuring scale at center top is 2 x 3.5 inches. Photographs by Kevin Tarbert, Pennsylvania Geological Survey intern.

Recommended Reading

[History](#) web page of the Ringing Hill Fire Company website.

Ringling Hill Fire Company owns the park.

Published by the [Pennsylvania Geological Survey](#).

